

MAUPIN 09/835,371

=> d ibib abs L43

L43 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:780897 HCAPLUS

DOCUMENT NUMBER: 135:331677

TITLE: Methods for **preparing phosphorylated**
peptide nucleic acids carrying one or more marker,
crosslinking, intracellular uptake, or binding
affinity groups

INVENTOR(S): Uhlmann, Eugen; Breipohl, Gerhard; Will, David William

PATENT ASSIGNEE(S): Aventis Pharma Deutschland G.m.b.H., Germany

SOURCE: PCT Int. Appl., 93 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001079216	A2	20011025	WO 2001-EP4030	20010407
WO 2001079216	A3	20020228		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
DE 10019135	A1	20011031	DE 2000-10019135	20000418
AU 2001054795	A5	20011030	AU 2001-54795	20010407
PRIORITY APPLN. INFO.:			DE 2000-10019135 A	20000418
			WO 2001-EP4030 W	20010407

OTHER SOURCE(S): MARPAT 135:331677

AB The invention relates to **PNA** derivs. that carry one or more **phosphoryl** groups at the C terminus or at the C and N terminus of the **PNA backbone**, said **phosphoryl** groups optionally carrying one or more marker groups, or groups for crosslinking, or groups that promote the intracellular uptake, or groups that improve the binding affinity of the **PNA** deriv. to nucleic acids. The invention further relates to a method for producing the above **PNA** derivs. and to the use thereof as a medicament or diagnostic agent. Thus, title compd. CH₃(CH₂)₁₅OP(O)(OH)-T(oeg)[ATTCCGTCAT](CH₂)₆NHP(O)(OH)O-CH₂CH(CH₂OH)(CH₂)₄NHC(S)NH-fluorescein (I) [T(oeg) = O(CH₂)₂N(C(O)CH₂-Base)CH₂C(O)-; remainder of chain = normal **peptide nucleic acid** backbone] was **prepd.** using solid-phase peptide synthesis techniques. Hybridization tests of I with complementary DNA and RNA showed better complexation with DNA than with RNA, though both were stronger than with **PNA** Ac-NH-TATTCGTCAT-(CH₂)₆NH₂ ref. In vitro cell proliferation studies using I and human pre-B leukemia cells showed stronger inhibition than a known phosphorothioate oligonucleotide (no data).

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IC ICM C07H

CC 34-3 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 6, 33, 63

ST PNA deriv **prepn** antiviral antimicrobial antitumor diagnostic hybridization

IT Diagnosis
(agents; **prepn.** of PNA derivs. as therapeutic or diagnostic agents)

IT Solid phase synthesis
(peptide; **prepn.** of PNA derivs. as therapeutic or diagnostic agents)

IT Antimicrobial agents
Antitumor agents
Antiviral agents
Biosensors
Nucleic acid hybridization
(**prepn.** of PNA derivs. as therapeutic or diagnostic agents)

IT Peptide nucleic acids
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(**prepn.** of PNA derivs. as therapeutic or diagnostic agents)

IT 368505-39-9P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(**prepn.** of PNA derivs. as therapeutic or diagnostic agents)

IT 367985-20-4P 367985-21-5P 367985-22-6P 367985-23-7P
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**prepn.** of PNA derivs. as therapeutic or diagnostic agents)

IT 367985-17-9P 367985-19-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**prepn.** of PNA derivs. as therapeutic or diagnostic agents)

IT 367985-18-0P 368505-37-7P 368505-38-8P 368505-40-2P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**prepn.** of PNA derivs. as therapeutic or diagnostic agents)

IT 110616-00-7 116364-61-5 147178-75-4 159845-57-5 169025-57-4,
GenBank AR029142 181988-02-3 181988-09-0 186070-79-1, GenBank A42375
186071-78-3 186108-31-6, 3: PN: WO0004034 SEQID: 3 unclaimed DNA
186123-93-3, GenBank A44395 186162-52-7 186162-55-0, GenBank A42368
189356-60-3 195184-07-7, GenBank A42342 195184-11-3, GenBank A42347
195184-12-4 195184-14-6, GenBank A42351 195184-15-7, GenBank A42352
195184-16-8, GenBank A44386 195184-17-9, GenBank A42354 195184-18-0,
GenBank A42355 195184-19-1, GenBank A42356 195184-20-4, GenBank A42357
195184-21-5, GenBank A42358 195184-22-6, GenBank A42359 195184-23-7,
GenBank A42361 195184-24-8, GenBank A42362 195184-25-9, GenBank A42363
195184-26-0, GenBank A47186 195184-27-1 195184-28-2, GenBank A47179
197831-18-8 246223-25-6 257601-47-1, GenBank AX283184 325605-36-5,
GenBank AX283169 325605-37-6, GenBank AX283174 325605-38-7
325605-39-8 325605-40-1 325605-41-2 325605-42-3 325605-43-4
325605-44-5 325605-45-6 325605-46-7 325605-47-8 325605-48-9
325605-49-0 325605-50-3 325605-51-4 325605-52-5
RL: PRP (Properties)
(unclaimed nucleotide sequence; methods for **prepg.**
phosphorylated peptide nucleic acids carrying one or more
marker, crosslinking, intracellular uptake, or binding affinity groups)

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IT 368505-39-9P .

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(prepn. of PNA derivs. as therapeutic or diagnostic agents)

RN 368505-39-9 HCAPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-[[(hexadecyloxy)hydroxyphosphinyl]oxy]]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 367985-20-4P 367985-21-5P 367985-22-6P

367985-23-7P

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of PNA derivs. as therapeutic or diagnostic agents)

RN 367985-20-4 HCAPLUS

CN DNA, d(A-T-G-A-C-G-G-A-A-T-A), complex with peptide nucleic acid ([5'-deamino-5'-(phosphonooxy)]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 367985-21-5 HCAPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-(phosphonooxy)]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH, complex with RNA (A-U-G-A-C-G-G-A-A-U-A) (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 367985-22-6 HCAPLUS

CN DNA, d(A-T-G-A-C-G-G-A-A-T-A), complex with peptide nucleic acid ([5'-deamino-5'-[[(hexadecyloxy)hydroxyphosphinyl]oxy]]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 367985-23-7 HCAPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-[[(hexadecyloxy)hydroxyphosphinyl]oxy]]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH, complex with RNA (A-U-G-A-C-G-G-A-A-U-A) (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 367985-17-9P 367985-19-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. of PNA derivs. as therapeutic or diagnostic agents)

RN 367985-17-9 HCAPLUS

CN Peptide nucleic acid, (acetyl-T-A-T-T-C-C-G-T-C-A-T)-[6-

(phosphonooxy)hexyl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 367985-19-1 HCAPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-(phosphonooxy)]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxo-16-aza-8-phosphaheptadec-1-yl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 367985-18-0P 368505-37-7P 368505-38-8P
368505-40-2P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**prepn.** of PNA derivs. as therapeutic or diagnostic agents)

RN 367985-18-0. HCAPLUS

CN Peptide nucleic acid, ([5'-[[[(6-aminohexyl)oxy]hydroxyphosphinyl]oxy]-5'-deamino]T-A-T-T-C-C-G-T-C-A-T)-[6-(phosphonooxy)hexyl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 368505-37-7 HCAPLUS

CN Peptide nucleic acid, (acetyl-T-A-T-T-C-C-G-T-C-A-[3'-de(carboxymethyl)-3'-[2-(phosphonooxy)ethyl]]T) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 368505-38-8 HCAPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-[[[6-[[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]amino]hexyl]oxy]hydroxyphosphinyl]oxy]]T-A-T-T-C-C-G-T-C-A-T)-[2-(phosphonooxy)ethyl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 368505-40-2 HCAPLUS

CN Peptide nucleic acid, ([5'-[(28-amino-1,21-dihydroxy-1,21-dioxido-2,5,8,11,14,17,20,22-octaosa-1,21-diphosphaoctacos-1-yl)oxy]-5'-deamino]T-A-T-T-C-C-G-T-C-A-T)-[6-(phosphonooxy)hexyl]NH, complex with RNA
(A-U-G-A-C-G-G-A-A-U-A) (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 110616-00-7 116364-61-5 147178-75-4

159845-57-5 169025-57-4, GenBank AR029142

181988-02-3 181988-09-0 186070-79-1, GenBank

A42375 186071-78-3 186108-31-6, 3: PN: WO0004034

SEQID: 3 unclaimed DNA 186123-93-3, GenBank A44395

186162-52-7 186162-55-0, GenBank A42368

189356-60-3 195184-07-7, GenBank A42342

195184-11-3, GenBank A42347 195184-12-4

195184-14-6, GenBank A42351 195184-15-7, GenBank A42352

195184-16-8, GenBank A44386 195184-17-9, GenBank A42354

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246223-25-6 257601-47-1, GenBank AX283184

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AX283174 325605-38-7 325605-39-8 325605-40-1

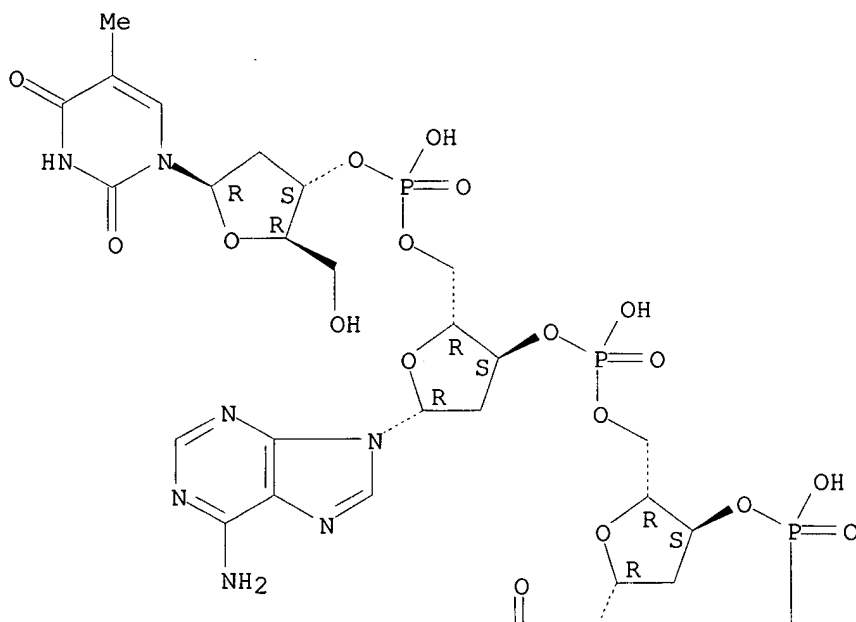
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phosphorylated peptide nucleic acids carrying one or more marker, crosslinking, intracellular uptake, or binding affinity groups)

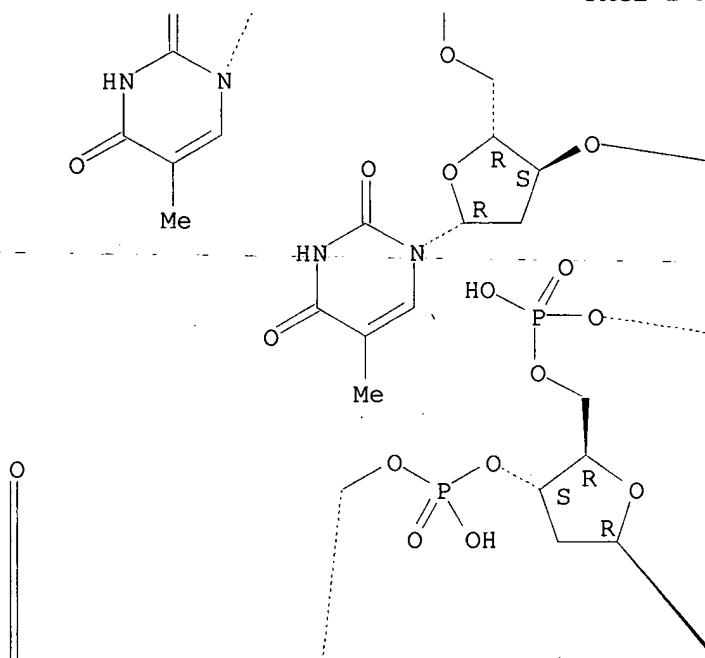
CN Adenosine, thymidyl- (5'.fwdarw.3')-2'-deoxyadenyl- (5'.fwdarw.3')-2'-
deoxycytidyl- (5'.fwdarw.3')-2'-deoxyguany- (5'.fwdarw.3')-2'-
deoxyguany- (5'.fwdarw.3')-2'-deoxyguany- (5'.fwdarw.3')-2'-
deoxyguany- (5'.fwdarw.3')-2'-deoxyadenyl- (5'.fwdarw.3')-2'-
deoxyguany- (5'.fwdarw.3')-thymidyl- (5'.fwdarw.3')-thymidyl-
 (5'.fwdarw.3')-2'-deoxyguany- (5'.fwdarw.3')-2'-deoxycytidyl-
 (5'.fwdarw.3')-2'-deoxyadenyl- (5'.fwdarw.3')-2'-deoxy- (9CI) (CA INDEX
NAME)

CN DNA, d(T-A-T-T-C-C-G-T-C-A-T) (9CI) (CA INDEX NAME)

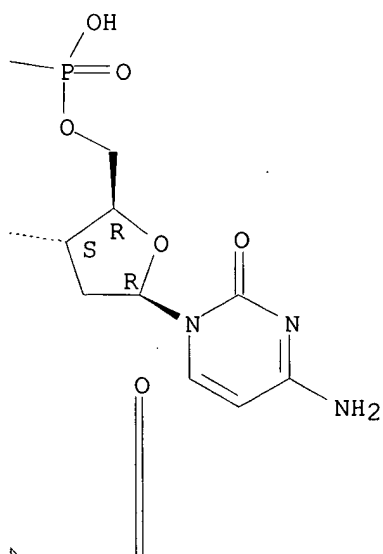
PAGE 1-A



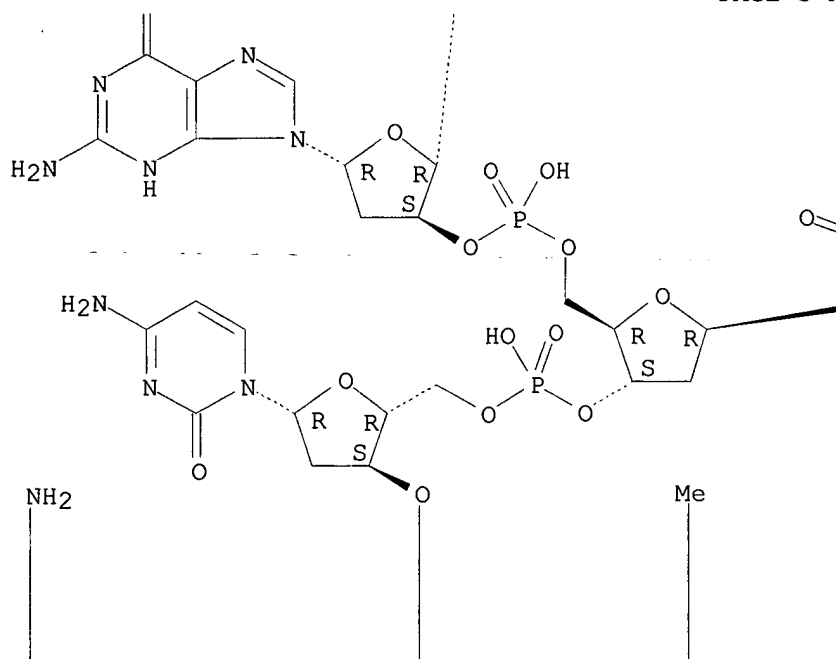
PAGE 2-A



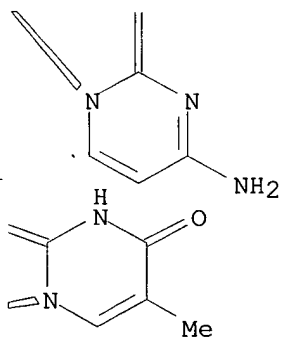
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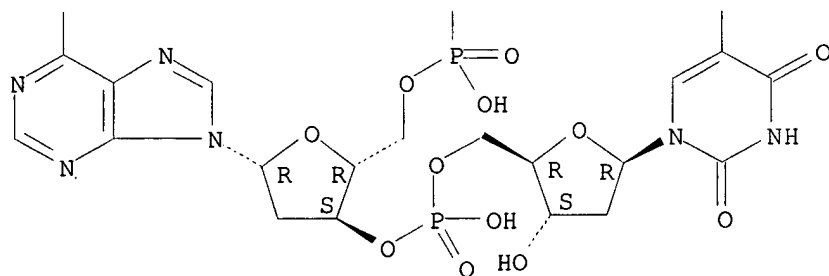
PAGE 3-A



PAGE 3-B



PAGE 4-A




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RN      147178-75-4      HCAPLUS
CN      Guanosine, 2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxycytidylyl-
(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxycytidylyl-
(3'.fwdarw.5')-2'-deoxycytidylyl-(3'.fwdarw.5')-2'-deoxycytidylyl-
(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-
(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-2'-
deoxycytidylyl-(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-2'-deoxyguanylyl-
(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-
(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-
(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-2'-deoxyguanylyl-(3'.fwdarw.5')-
2'-deoxy-, double-stranded complementary (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      159845-57-5      HCAPLUS
CN      DNA, d(G-C-C-C-G-A-A-G-A-C-C-C-C-G-G-C-A-C), double-stranded complementary
(9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      169025-57-4      HCAPLUS
CN      6: PN: WO9960167 SEQID: 5 unclaimed DNA (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      181988-02-3      HCAPLUS
CN      DNA, d(C-C-C-C-C-A-C-C-A-C-T-T-C-C-C-C-T-C-T-C) (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      181988-09-0      HCAPLUS
CN      DNA, d(G-C-C-C-A-A-G-C-T-G-G-C-A-T-C-C-G-T-C-A) (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      186070-79-1      HCAPLUS
CN      86: PN: US6323185 SEQID: 86 claimed DNA (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      186071-78-3      HCAPLUS
CN      DNA, d(A-A-T-G-C-A-T-G-T-C-A-C-A-G-G-C-G-G-G-A), double-stranded
complementary (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      186108-31-6      HCAPLUS
CN      3: PN: WO0004034 SEQID: 3 unclaimed DNA (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      186123-93-3      HCAPLUS
CN      37: PN: WO0179249 SEQID: 63 unclaimed DNA (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      186162-52-7      HCAPLUS
CN      DNA, d(G-T-G-T-C-G-G-G-G-T-C-T-C-C-G-G-G-C) (9CI)  (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN      186162-55-0      HCAPLUS
CN      Guanosine, 2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-
2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-
thymidylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-2'-
deoxycytidylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-thymidylyl-
(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-
(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-
(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-
(5'.fwdarw.3')-thymidylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-

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2'-deoxy- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 189356-60-3 HCAPLUS

CN DNA, d(A-T-G-G-C-G-C-A-C-G-C-T-G-G-G-A-G-A), double-stranded complementary
(9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-07-7 HCAPLUS

CN 61: PN: WO0179249 SEQID: 23 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-11-3 HCAPLUS

CN 19: PN: WO0179249 SEQID: 45 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-12-4 HCAPLUS

CN DNA, d(G-G-C-T-G-C-T-G-G-A-G-C-G-G-G-G-C-A-C-A-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-14-6 HCAPLUS

CN 43: PN: WO0179249 SEQID: 5 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-15-7 HCAPLUS

CN 75: PN: WO0179249 SEQID: 104 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-16-8 HCAPLUS

CN 45: PN: WO0179249 SEQID: 7 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-17-9 HCAPLUS

CN 46: PN: WO0179249 SEQID: 8 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-18-0 HCAPLUS

CN 47: PN: WO0179249 SEQID: 9 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-19-1 HCAPLUS

CN 48: PN: WO0179249 SEQID: 10 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-20-4 HCAPLUS

CN 49: PN: WO0179249 SEQID: 11 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-21-5 HCAPLUS

CN 51: PN: WO0179249 SEQID: 13 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-22-6 HCAPLUS

CN 9: PN: WO0179249 SEQID: 35 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-23-7 HCAPLUS

CN 12: PN: WO0179249 SEQID: 38 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-24-8 HCAPLUS
 CN 13: PN: WO0179249 SEQID: 39 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-25-9 HCAPLUS
 CN 14: PN: WO0179249 SEQID: 40 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-26-0 HCAPLUS
 CN 15: PN: WO0179249 SEQID: 41 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-27-1 HCAPLUS
 CN DNA, d(C-A-C-G-T-T-G-A-G-G-G-G-C-A-T) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-28-2 HCAPLUS
 CN 20: PN: WO0179249 SEQID: 46 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 197831-18-8 HCAPLUS
 CN PN: WO9950409 TABLE: 1 unclaimed sequence (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 246223-25-6 HCAPLUS
 CN DNA, d(G-C-G-G-C-G-G-A-A-A-A-G-C-C-A-T-C-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 257601-47-1 HCAPLUS
 CN 1: PN: EP978561 SEQID: 1 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-36-5 HCAPLUS
 CN 18: PN: WO0108707 SEQID: 18 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-37-6 HCAPLUS
 CN 5: PN: WO0108707 SEQID: 23 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-38-7 HCAPLUS
 CN DNA, d(G-G-A-G-G-C-C-C-G-A-C-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-39-8 HCAPLUS
 CN 37: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-40-1 HCAPLUS
 CN 48: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-41-2 HCAPLUS
 CN 49: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-42-3 HCAPLUS
 CN 50: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-43-4 HCAPLUS
 CN 54: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-44-5 HCAPLUS
 CN 55: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-45-6 HCAPLUS
 CN 56: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-46-7 HCAPLUS
 CN 57: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-47-8 HCAPLUS
 CN 58: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-48-9 HCAPLUS
 CN 59: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-49-0 HCAPLUS
 CN 91: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-50-3 HCAPLUS
 CN DNA, d(G-C-A-G-C-C-C-C-G-C-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-51-4 HCAPLUS
 CN DNA, d(G-C-A-G-C-A-G-C-C-C-C-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-52-5 HCAPLUS
 CN DNA, d(G-A-T-G-G-A-G-G-G-C-G-G-C-A-T-G-G-C-G-G-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***